

Name(s) of Risk Team Members: D. Bruno, M. Bannon, N. Laloudakis, R. Savage			Point Value → Parameter ↓		1		2		3		4		5				
Area/Facility Description Title: Collider-Accelerator  Area/Facility # (if applicable): Equipment Testing Areas FRA 19-06			Occupancy or Use (A)		≤once/year		≤once/month		≤once/week		≤once/shift		>once/shift				
Area/Facility Description: Equipment Testing Area-Wide			Severity (B)		First Aid Only		Medical Treatment		Lost Time		Partial Disability		Death or Permanent Disability				
			Likelihood (C)		Extremely Unlikely		Unlikely		Possible		Probable		Multiple				
Approved by: <i>E. Lessard</i> Date: 3/10/06      Rev.#: 0																	
Reason for Revision (if applicable): N/A									Comments:								
					Before Additional Controls							After Additional Controls					
Physical Item or Activity	Hazard(s)	Control(s)			Occupancy A	Severity B	Likelihood C	Risk* AxBxC	Control(s) Added to Reduce Risk				Occupancy A	Severity B	Likelihood C	Risk* AxBxC	% Risk Reduction
Radiation	See <a href="#">Facility-Wide Radiation Evaluation</a>	See Facility-Wide Radiation Evaluation															
Electrical	See <a href="#">Facility-Wide Electrical Evaluation</a>	See Facility-Wide Electrical Evaluation															
High voltage electrical	See <a href="#">Facility-Wide Electrical Evaluation</a>	See Facility-Wide Electrical Evaluation															
Housekeeping	See <a href="#">Facility-Wide Housekeeping Evaluation</a>	See Facility-Wide Housekeeping Evaluation															
Fire	See <a href="#">Facility-Wide Fire Evaluation</a>	See Facility-Wide Fire Evaluation															
Chemicals	Exposure	Postings, barriers, PPE, maintenance, training, work planning, procedures, Tier 1 inspections, CMS, MSDS, volume controls, locked/controlled areas			4	2	2	16									
Chemicals	Fire/explosion	Postings, barriers, PPE, maintenance, training, work planning, procedures, Tier 1 inspections, CMS, MSDS, volume controls, locked/controlled areas			4	2	2	16									
Water	Being struck by an object due to a pressure release	Postings, maintenance, PPE, training, work planning, ASSRC review, procedures, Tier 1 inspections, PLC monitoring and interlocks			4	3	2	24									
Water	Contact with temperature – extremes that result in such injuries frost bite or burns	Postings, maintenance, PPE, training, work planning, ASSRC review, procedures, Tier 1 inspections			4	3	2	24									

Pressurized Gas Systems	Being struck by an object due to a pressure release	Postings, PPE, maintenance, training, work planning, Cryogenic Safety Committee /ASSRC reviews, procedures, interlock systems, Certification/testing of pressure related equipment, Tier 1 inspections, LOTO, C-AD Chief ME reviews, codes and standards usage	4	3	2	24					
Vacuum	Ear damage	Postings, PPE, maintenance, training, work planning, ASSRC reviews, procedures, Tier 1 inspections, Chief ME reviews, vacuum windows covered during handling, use of industry standards, design reviews, noise monitoring	3	4	2	24					
Vacuum	Being struck by an object due to a vacuum failure	Postings, PPE, maintenance, training, work planning, ASSRC reviews, procedures, Tier 1 inspections, Chief ME reviews, vacuum windows covered during handling, , use of industry standards, design reviews	3	3	2	18					
Work at heights	Falls to lower level, such as falling from a ladder or over a railing	Postings, barriers, fall protection, maintenance, training, work planning, procedures, Tier 1 inspections, PPE, approved scaffolding and platforms, approved ladders, anti-slip surfaces	3	3	3	27					
Thermal Extremes	Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns	Postings, barriers, maintenance, training, work planning, PPE, procedures, Tier 1 inspections, design reviews, ASSRC reviews, LOTO	4	2	2	16					
RF	Radiation heating	Postings, maintenance, training, work planning, ASSRC reviews, procedures, interlock systems, Tier 1 inspections, RF gaskets, LOTO	4	3	2	24					
Magnetic Field	Adverse mechanical force exerted on ferromagnetic objects and or to electronic/medical implants.	Barriers, warning systems, postings, training, ASSRC review, work planning, procedures, Tier 1 inspections, magnetic safety reviews, medical exams	3	3	2	18					
Use of hand tools	Being struck by an object such as flying chips or debris	PPE, training, maintenance, Tier 1 inspections, UL listed equipment, pre-inspections	3	4	2	24					
Use of hand tools	Electrical shock	GFCI, grounding cases or insulated cases	3	3	2	18					
Use of hand tools	Being struck against an object such as a sharp surface	PPE, training, guards	3	3	3	27					
Use of hand tools	Becoming caught in or compressed by equipment	Equipment specific training, guarding, PPE, postings	3	3	3	27					
Crane use/Rigging	Being struck by an object, such as a tool falling on a worker from above	Training, procedures, PPE, postings, work planning, Tier 1 inspections, barriers	3	3	3	27					
Forklift use	Being struck by an object due to improperly secured material or loss of control	Training, procedures, PPE, postings, work planning, Tier 1 inspections	3	4	3	36					

Welding and brazing	UV exposure	PPE, work planning, procedures, welding permits, designated welding areas reviewed by Fire/Rescue Group, personnel and area monitoring	2	3	3	24					
Welding and brazing	Electric shock	Maintenance of equipment, training, UL approved equipment	2	5	2	20					
Welding and brazing	Contact with temperature – extremes that result in burns	PPE, work planning, procedures, training, designated welding areas reviewed by F/R Group	2	2	3	12					
Welding and brazing	Toxic fumes	PPE, work planning, ventilation, designated welding areas reviewed by F/R Group, personnel and area monitoring	2	3	3	18					
Welding and brazing	Noise	Ear protection, work planning, medicals, noise monitoring	2	4	2	16					
Material Handling	Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, carrying or throwing of an object	Training, work planning, proper handling equipment	3	3	3	27					
Material Handling	Being struck by an object due to improperly secured material or loss of control	Training, work planning	3	4	3	36					
Material Handling	Being struck against an object such as a sharp surface	Training, work planning	3	4	3	36					
*Risk:		0 to 20	21 to 40		41-60		61 to 80		81 or greater		
		Negligible	Acceptable		Moderate		Substantial		Intolerable		